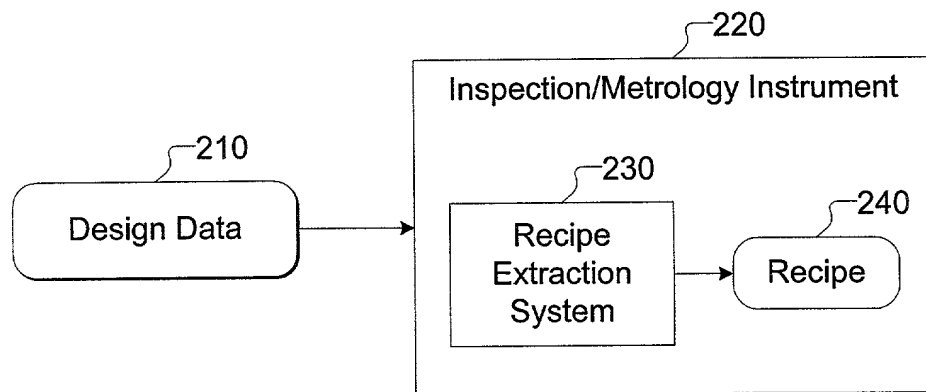
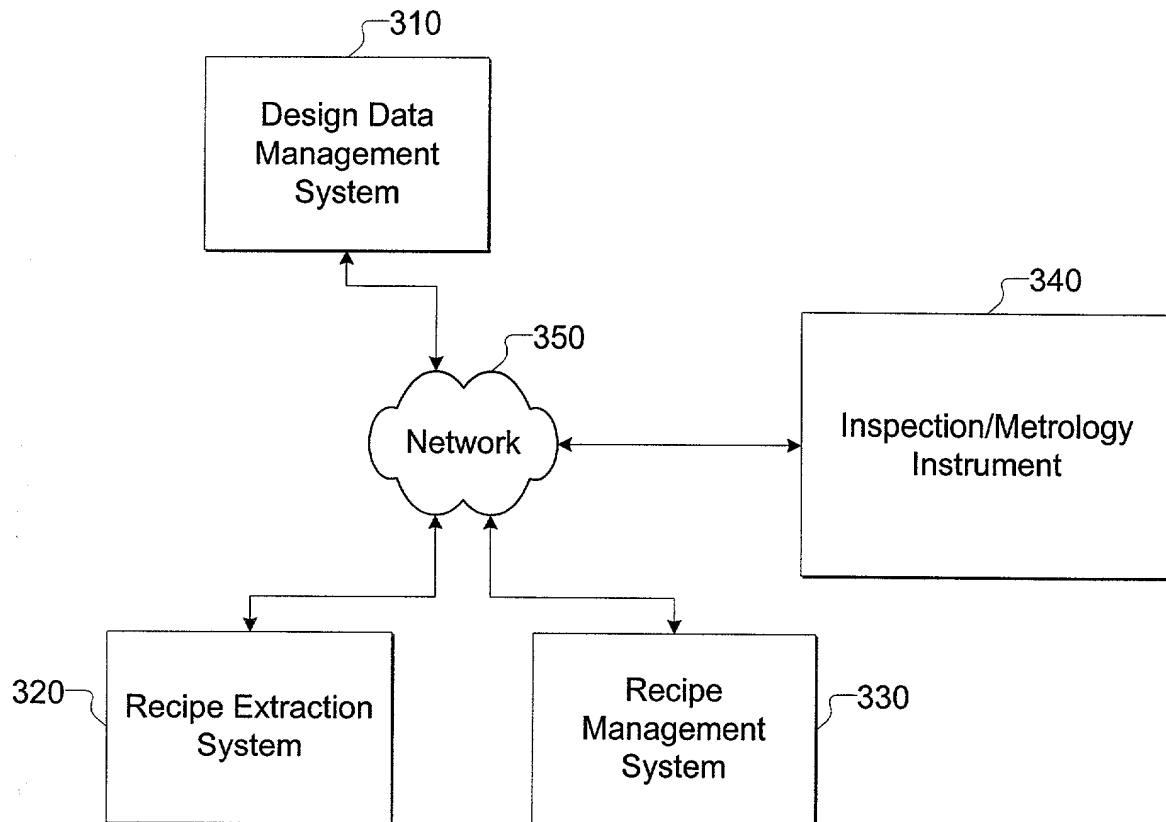


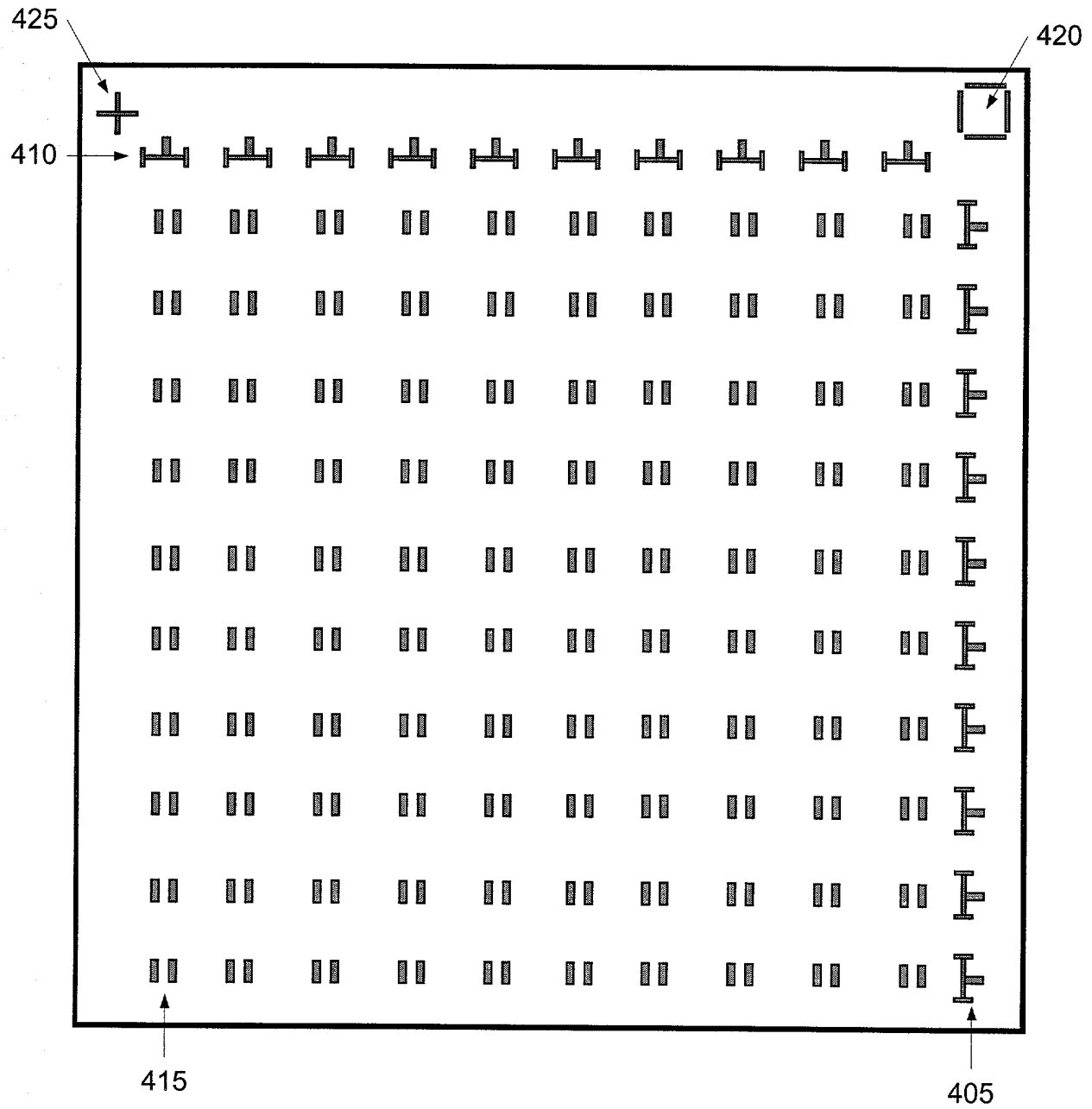
**FIG. 1**



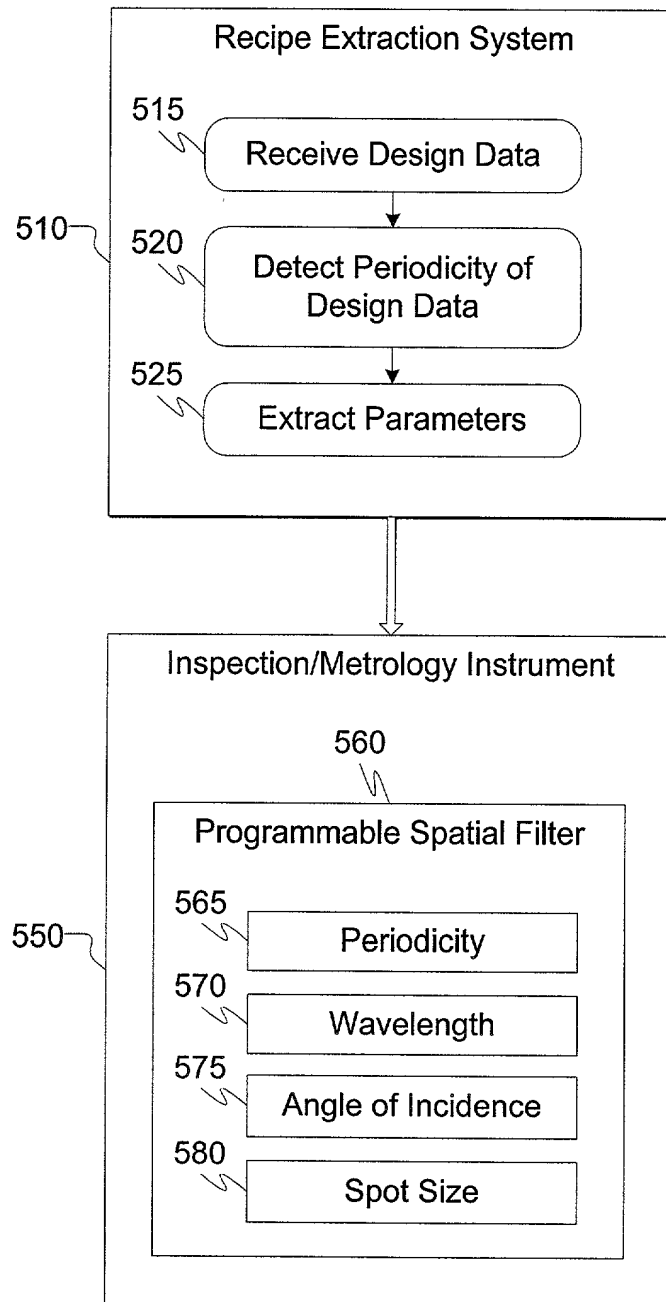
**FIG. 2**



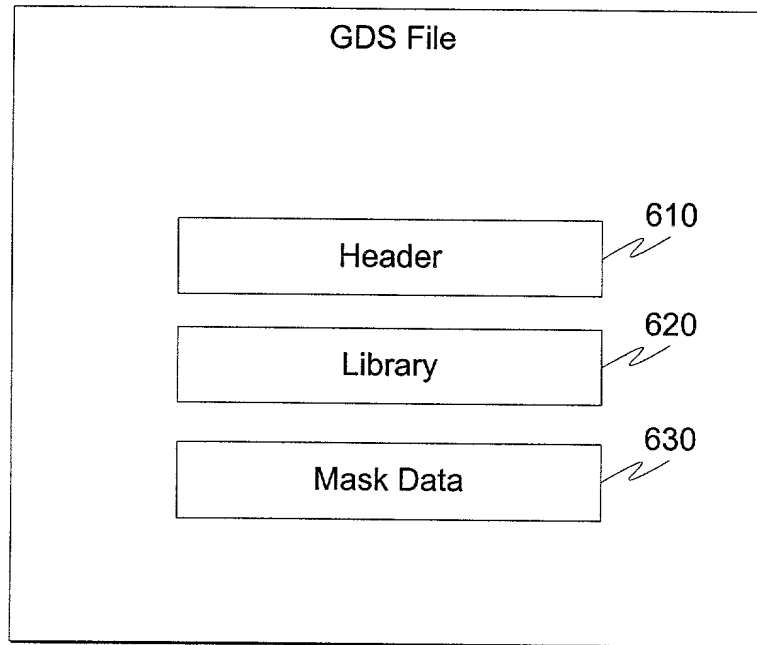
**FIG. 3**



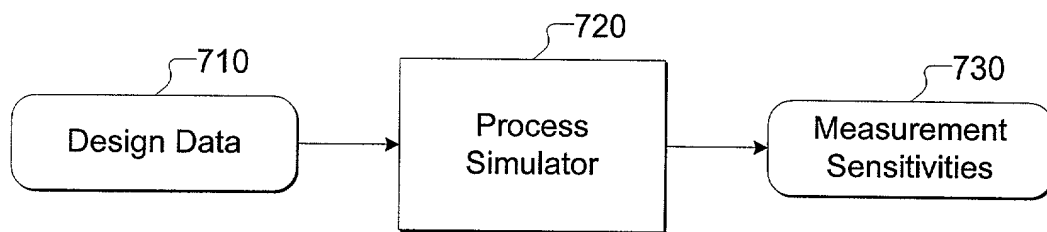
**FIG. 4**



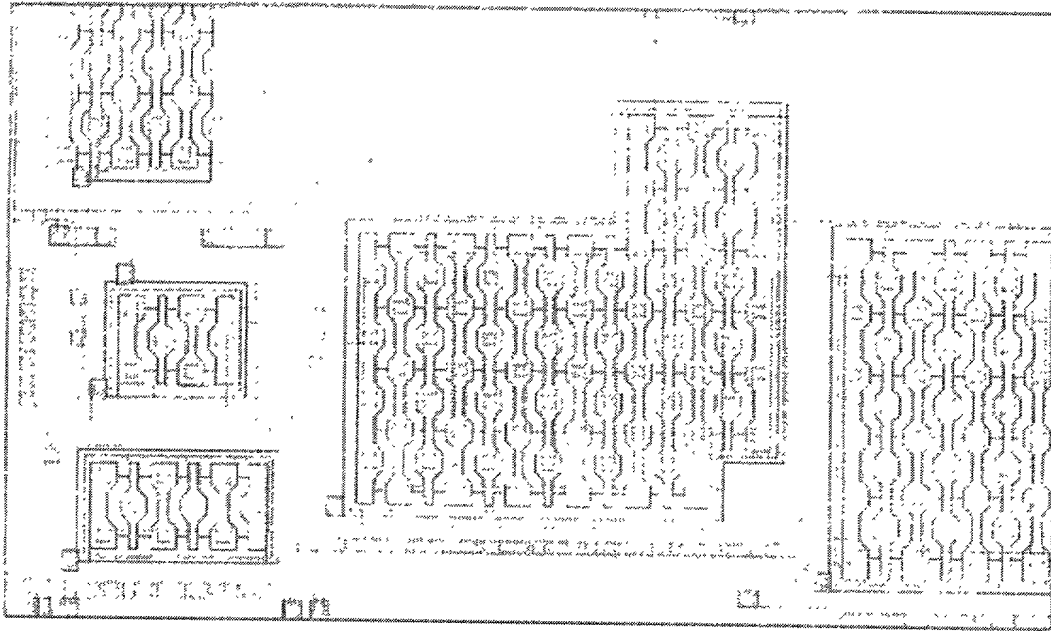
**FIG. 5**



**FIG. 6**



**FIG. 7**



**FIG. 8**



# Overlay Recipe Example

Recipe Item	Overview	Method
Alignment Sites	Look by name for structures from list of known good site types and locate instances at about 3 O'clock and 9 O'clock	<ol style="list-style-type: none"> <li>1. Search for structure types in GDS file to locate appropriate structures.</li> <li>2. Determine location of sites relative to die origin.</li> <li>3. Determine locations on wafer from list of die origins in stepper setup file and offsets from die origin.</li> <li>4. Choose those closest to 3 and 9 O'clock.</li> </ol>
Measurement Sites	Look for overlay measurement sites close to the locations for a 9 site pattern	<ol style="list-style-type: none"> <li>1. Search for structure types in GDS file to locate appropriate structures.</li> <li>2. Determine location of sites relative to die origin.</li> <li>3. Determine locations on wafer from list of die origins in stepper setup file and offsets from die origin.</li> <li>4. Choose those closest to 9 site pattern locations.</li> </ol>
Measurement Info	Determine algorithm based on measurement site type	<ol style="list-style-type: none"> <li>1. Determine site type by name in GDS file.</li> <li>2. Use lookup table to determine algorithm.</li> </ol>
Target Value	Determine target value from geometry information for measurement site	<ol style="list-style-type: none"> <li>1. Use geometry information in GDS file to derive target value.</li> </ol>

905

910

915

920

**FIG. 9**

# Overlay Recipe Example

Express Mail Label EL566290655US  
Title: DESIGN DRIVEN INSPECTION OR  
MEASUREMENT  
Inventor: Christopher P. Bevis  
Atty. Docket No.: 22120-0-6499  
Sheet 10 of 12

- Meas Sites
- Align Sites

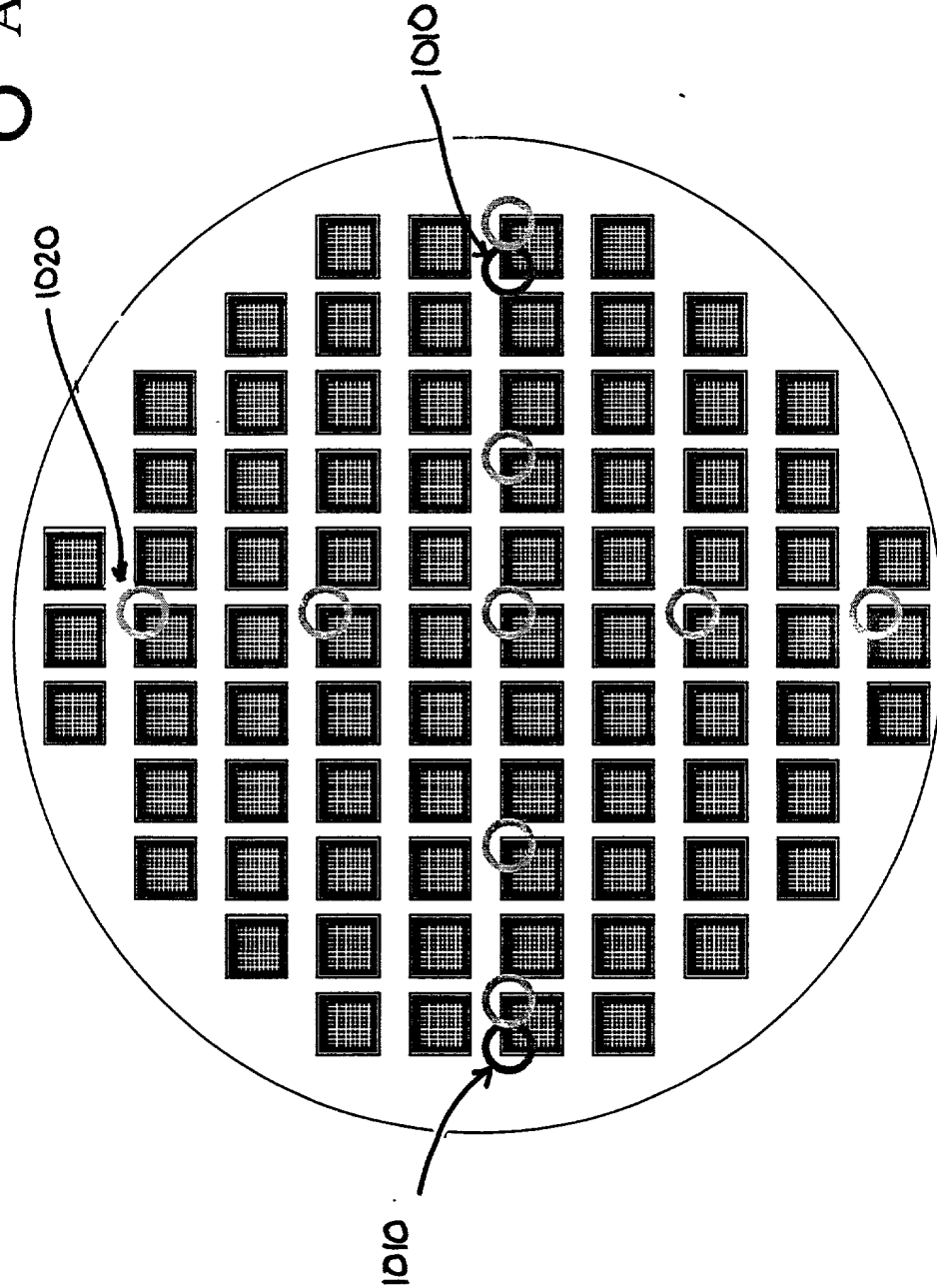


FIG. 10

# Inspection Recipe Example

Recipe Item	Overview	Method
Alignment Sites	Look by name for structures from list of known good site types and locate instances at about 3 O'clock and 9 O'clock.	<ol style="list-style-type: none"> <li>Search for structure types in GDS file to locate appropriate structures.</li> <li>Determine location of sites relative to die origin.</li> <li>Determine locations on wafer from list of die origins in stepper setup file and offsets from die origin.</li> <li>Choose those closest to 3 and 9 O'clock.</li> </ol>
Machine setup	Determine appropriate gain and laser power from process level.	<ol style="list-style-type: none"> <li>Determine process level from mask level name.</li> <li>Use lookup table to determine laser power and gain.</li> </ol>
Region based thresholding	Identify areas where high sensitivity is possible ( such as highly periodic region and open areas ) based on the pattern expected on the wafer and set thresholds for that region appropriately. Similarly, estimate the achievable sensitivity for each region of similar makeup.	<ol style="list-style-type: none"> <li>Determine array regions by looking for array statements in GDS file.</li> <li>Determine open areas by generating estimated image on wafer.</li> <li>Set thresholds for these regions appropriately.</li> <li>Duplicate over all die using info from stepper setup file.</li> </ol>
PSF (programmable spatial filter in detector fourier plane) setup	Use expected wafer image to generate optimal PSF settings.	<ol style="list-style-type: none"> <li>Generate expected Image on wafer from GDS file.</li> <li>Perform fourier transform on image.</li> <li>Generate PSF pattern settings based on peaks in fourier transform.</li> </ol>

**FIG. 11**

# Inspection Mask Recipe Example

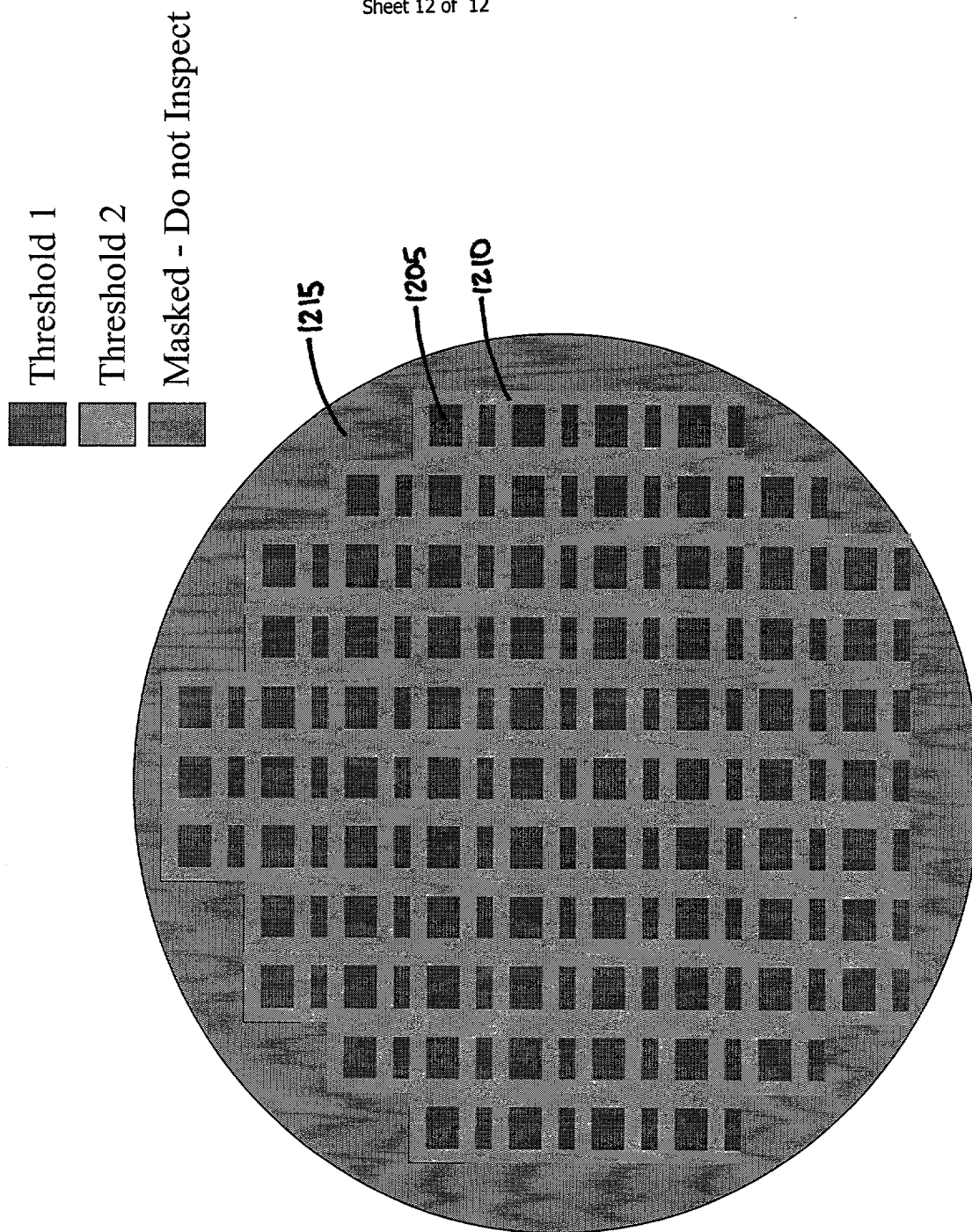


FIG. 12